



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

## Notes on the ZOPHERI of the United States.

BY GEO. H. HORN, M. D.

The occurrence of several new species of the genus *Zopherus* has suggested the propriety of bringing into one paper the descriptions of the other species known from the western parts of our territory.

The form of these insects is so well known as hardly to need any general description, and so peculiar as to enable them to be distinguished from any other Tenebrionidæ. They are all of moderate or even of large size, elongate, convex, and furnished with a tegument so hard, as to be with difficulty perforated by the ordinary cabinet pin.

The species from Mexico are whitish above, with elevated subopaque black spots, varying in size according to the species. Those from our own country, (excepting *nodulosus*), are all black, and readily distinguished by the sculpture of the elytra. The last ventral segment is also ornamented with tubercles, though not varying sufficiently among the several species as to be of any value in indicating specific differences. This same style of ornamentation obtains in all the Zopherini, and disappears almost entirely in the next group, Usechini. With one exception (*Jourdanii* Sallé) all the bicolored species have the apices of the elytra quadrituberculate, the black species are bituberculate. The apices of the elytra in all the species have a deep groove on each side, making the suture appear elevated, and bounding the tubercle on the inner side.

**ZOPHERUS, Gray.**

**Z. nodulosus**, elongate, convex. Head black, subopaque, finely and sparsely punctured, and with a triangular, white occipital spot. Thorax convex, nearly as broad as long, anteriorly emarginate, with the angles rounded, posteriorly subtruncate, sides anteriorly scarcely sinuate, posteriorly sinuate and crenulate, much narrower behind than before; above white, with a central black stripe much narrower at its middle, and with a few lateral black spots sparsely placed. Elytra elliptical, convex, sides moderately rounded, base slightly emarginate, with the angles distinct; above white, with elevated, smooth, black spots, arranged as follows;—a sutural row of spots not distinct from each other, a subsutural row of four or five larger spots, two central rows of four or five spots each, and a marginal row, a few very small black spots in rows representing the striæ, of which the rows of larger spots mark the interspaces. Apex four-tuberculate. Legs black. Beneath black, coarsely punctured, with the side pieces of the metathorax and the sides of the second and third abdominal segments white. Length .80—1.10 inch.

SOLIER, Ann. Ent. Soc. France, V, 42.

This species is very abundant in western and south-western Texas, whence specimens are sent in every collection made. It resembles closely several Mexican species, though readily distinguished by its less convex form, and the fewer number and less elevation of the black tubercles.

**Z. concolor**, black, moderately shining; head sparsely punctured; thorax moderately convex, sparsely punctured, sides anteriorly rounded, posteriorly crenulate, base subtruncate, much narrower than at apex; elytra elliptical, sides moderately rounded, base slightly emarginate, humeral angles distinct, surface deeply wrinkled, forming very convex tubercles, with a tendency to a longitudinal arrangement; apex of elytra forming two tubercles, separated from the sutural elevation by a deep groove. Beneath black, coarsely and densely punctured. Length .6 inch.

LECONTE, Ann. Lyc. V, 130.

Found near Santa Fé, New Mexico, by Mr. Fendler. This species is at present rare in collections, the type being the only one at present known. Cabinet of Dr. Leconte.

**Z. guttulatus**, black, subopaque; head very sparsely punctured; thorax sparsely punctured, moderately convex, anteriorly emarginate, posterior margin subtruncate; elytra oval, convex; sides rounded, apex bituberculate, tubercles attaining the sutural elevation, groove distinct, surface subopaque, with smooth, elevated spots arranged in eight or more longitudinal rows; spots more or less rounded, distinct from each other. Beneath subopaque, sparsely though rather coarsely punctured. Long .64—.77 inch.

This pretty species occurs in south-western Texas, whence two specimens were brought by Mr. E. T. Cresson, and are now in the Collection of the American Entomological Society. This may be distinguished very readily from all our other species by the peculiar, almost sericeous, appearance of the surface above and below, and by the form and arrangement of the smoother elevated spots. These are more distinct than in *tristis* and more distantly placed, at the same time preserving a nearly rounded form; they are less convex than in *concolor* and not nearly so glossy. The interspaces are distinct, and deep opaque-black in color. On comparison with *tristis*, and which it would be the more readily confounded by descriptions, the thorax will be found much less convex, the sides more distinctly angulate, and with comparatively few punctures on the upper surface. The elytra are more rounded on the sides and more convex above. The apical groove is also much shorter. In outline the elytra more nearly resemble those of *concolor*. From *concolor* this species may be distinguished by the peculiar appearance of its surface, and by the less convex, less shining elevated spots, and by the distance at which they are placed from each other.

**Z. tristis**, black, subopaque; head coarsely and sparsely punctured; thorax slightly longer than wide, coarsely and sparsely punctured on the disk, more densely at the sides; sides subangulate before the middle, posteriorly crenulate. Elytra elliptical, moderately convex, base slightly emarginate, angles distinct, surface roughened, with slightly elevated, smoother tubercles, on one side of each a fine puncture, from which arises a minute yellow scale-like hair; apex of elytra bituberculate, suture elevated at apex, groove short. Beneath as in *concolor*. Length .55—.85 inch.

LECONTE, Ann. Lyc. V, 130.

This species resembles *concolor* more decidedly than it does any other species, but may be readily distinguished by the characters above given. The smooth elevated spots have a stronger tendency to a linear arrangement, the interspaces are well marked, and the elevations themselves much less convex than in *concolor*. The humeral angles are more distinct, and the space between them distinctly broader than the base of the thorax. The groove at the apex of the elytra is shortened behind, allowing the tubercles and the sutural elevation to join. In some specimens there is also a slight longitudinal thoracic impression.

This species is not rare in Arizona. In my sojourn in that region, eighteen individuals were found. Those captured at Fort Grant lived under the dead bark of Mesquite, others on the Maricopa desert, were under the dead trunks of *Cereus giganteus*, another was found at Yuma in my tent. A short time since, I received a specimen, from which the larger measurement was taken, from Mr. Wm. M. Gabb, collected from near the upper end of the peninsula of Lower California. This differs in no other particular than size, from the specimens from Yuma and Arizona.

**Z. opacus**, black, opaque; head finely and sparsely punctured; thorax longer than broad, sides moderately rounded in front of the middle, posteriorly crenulate, base subtruncate and narrower than the apex; above coarsely and densely punctured; elytra elliptical, moderately convex, with very fine granular elevations arranged in irregular longitudinal series, with a fine puncture at the base of each granule, from which arises a very short scale-like hair. Apex of elytra bituberculate, sutural elevation prolonged, groove deep. Beneath sculptured as in the two preceding species. Length .85 inch.

This species may be readily distinguished from any others of the genus known, by the peculiar sculpture of the elytra. The punctures of the thorax have, in many instances, a slight elevation of their margin on one side, giving a granulated appearance to the surface. The humeral angles of the elytra are less distinct in this than the two preceding species, and the bases of the thorax and elytra are equal.

This species is found in Nevada, probably near the southern boundary. For the specimen in my possession I am indebted to Mr. John Akhurst, of Brooklyn; another remains in his cabinet.

Through the kindness of Mr. Ulke I have been permitted to examine a specimen of this species from his cabinet. It differs from the type only in being smaller, and with the granules less distinctly marked. This obliteration of sculpture is probably the result of age in the specimen. While at Fort Tejon, California, I had abundant opportunity of examining the *Phloxodes* of various ages, and found that while in those of the present season were sharply sculptured, and the granules very distinct, those of the preceding seasons were comparatively smooth. As all these insects live under bark on logs and stumps, it is probable that the smoothness of some is merely the result of mechanical action.

*Z. gracilis*, black, shining; head finely and sparsely punctured; thorax finely and sparsely punctured, sides subangulate, before the middle slightly sinuate, posteriorly finely crenulate; base narrow, subtruncate; elytra elongate, oval, surface very slightly rugose, and with striæ of fine, rather distant punctures, in each of which is a short, scale-like golden hair. Apex bituberculate, groove broad. Prothorax beneath coarsely and densely punctured. Abdomen sparsely punctured. Length .63 inch.

This species may be readily distinguished by its slender form and almost total absence of elytral sculpture. It is more glossy than any of the already described species. The bases of the thorax and elytra are nearly equal in width. In all of the preceding species the basal margin of the thorax is slightly elevated, and with a slight groove in front of the elevation; this totally disappears in the present species.

This species inhabits Arizona, in the neighborhood of Fort Whipple, where it was collected by Dr. Coues, who placed it at the disposal of Mr. Ulke, to whom Dr. Leconte is indebted for the only specimen of this fine species now in his cabinet.

In order to render the species now known, easily determinable, the following synoptic table is added:—

Elytra quadrituberculate at apex .....	<i>nodulosus</i> , Solier.
Elytra bituberculate at apex.	
Elytra with smooth elevated tubercles.	
Tubercles round, very convex, approximate and shining.....	<i>concolor</i> , Lec.
Tubercles round, flattened, distinct and subopaque....	<i>guttulatus</i> , Horn.
Tubercles elongate, flattened, moderately shining.....	<i>tristis</i> , Lec.
Elytra finely granulate.....	<i>opacus</i> , Horn.
Elytra finely punctured.....	<i>gracilis</i> , Horn.